

What is claimed is:

1. A mold comprising:
a support comprising a composite material of a polymeric material and a reinforcing
5 material, and
a shape-imparting surface layer disposed on the support.
2. The mold of claim 1 wherein the mold is flexible.
- 10 3. The mold of claim 1 wherein the shape-imparting surface layer is microstructured.
4. The mold of claim 3, wherein the microstructured surface comprises a groove pattern.
5. The mold of claim 3, wherein the microstructured surface comprises a protrusion
15 pattern.
6. The mold of claim 3, wherein said reinforcing material comprises an inorganic
material, an organic material, a metal material, a metal oxide or a mixture thereof.
- 20 7. The mold of claim 6, wherein said reinforcing material is a fiber.
8. The mold of claim 1, wherein the composite comprises the reinforcing material in an
amount of 20 to 70 percent volume based on the composite.
- 25 9. The mold of claim 1, wherein said polymeric material is selected from the group
consisting essentially of a polyolefin, a polyvinyl chloride, a polystyrene, a polycarbonate,
a polyethylene terephthalate, a polybutylene terephthalate, a polyether sulfone, a
polyphenylene sulfide and a liquid crystal polymer.
- 30 10. The mold of claim 9, wherein said polyolefin is a polypropylene or a cycloolefin.
11. The mold of claim 1, wherein said composite material comprises polypropylene and

glass fiber.

12. The mold of claim 1, wherein said shape-imparting layer comprises a cured resin composition.

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13. The mold of claim 12, wherein said cured resin composition is photocured.

14. The mold of claim 3, wherein the microstructured surface is a protrusion pattern corresponding to barrier ribs for a back plate of a plasma display panel.

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15. A mold comprised of a polymeric material having a coefficient of hydroscopic swelling of less than 7 ppm per percent relative humidity.

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16. The mold of claim 15 wherein the mold comprises a shape-imparting microstructured surface layer suitable for making barrier ribs.

17. The mold of claim 16, wherein the coefficient of hydroscopic swelling is less than 5 ppm per percent relative humidity.

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18. The mold of claim 16, wherein the coefficient of hydroscopic swelling is less than 3 ppm per percent relative humidity.

19. The mold of claim 16, wherein the coefficient of hydroscopic swelling is less than 1 ppm per percent relative humidity.

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20. A method of making a microstructured article comprising
providing the mold of any of claims 1 to 14 or 16 to 19;
disposing a curable material between a substrate and the shape-imparting
microstructured surface layer of the mold;
30 curing the curable material; and
removing the mold.

21. A method for producing a flexible mold comprising:

providing a master mold having on a surface protrusion pattern;

applying a curable resin composition to the surface protrusion patter of the master mold to form a shape-imparting layer precursor;

5 providing a support layer on the shape-imparting layer wherein the support layer comprises a composite material of a polymeric material and a reinforcing material;

curing the curable resin; and

releasing the shape-imparting layer together with the support from the master mold.

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22. The method of a claim 21 wherein the support is a preformed film.

23. The method of claim 21 wherein the preformed film comprises a primer layer and the primer layer in place in contact with curable resin of the shape-imparting layer.

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